

**6 Degrees of freedom controller with capability of tactile feedback**

Patent Number: ☐ US5589828  
Publication date: 1996-12-31  
Inventor(s): ARMSTRONG BRAD A (US)  
Applicant(s):  
Requested Patent: ☐ WO9318475  
Application Number: US19920847619 19920305  
Priority Number(s): US19920847619 19920305  
IPC Classification: G05G9/00  
EC Classification: G05G9/047B, G06F3/02A3P, G06F3/033Z8D4, G06F3/033Z8D6, H01H25/00  
Equivalents:

*PCT Family member*

**Abstract**

Described and shown is a six degree of freedom physical to electrical converter with capability of tactile feedback, specifically, a human hand operated input controller with the capability of vibration feedback in the handle. Two embodiments, each capable of translating complex three dimensional linear and rotational forces into their constituent orthogonal vectors are described and shown. Also described and shown are various different sensor types which can be implemented in the embodiments. The embodiments have physical space between sensors and actuators maintained by resilient means, enabling tactile feedback (vibration) to be induced directly in the handle without erroneously activating sensors.

Data supplied from the esp@cenet database - I2